REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

I. Status of the Claims

Claims 4 and 6 are amended to recite that the polyol in the fiber reinforced plastic does not comprise a chain extender. Support for the amendments can be found, for example, on page 5, lines 6-13; page 6, lines 6-15; and page 13, lines 7-14 in the Specification. Claims 21-22 and 23-24 are added to recite that the thermoset shape memory polymer composition of claim 4 and claim 6, respectively, has a viscosity of about 1000 cps or less and a pot life of at least about 30 minutes, respectively. Support for the new claims can be found, for example, from line 18 on page 9 to line 3 on page 10 in the Specification. Claims 19 and 20 are canceled. No new matter is introduced. Claims 4-12, 16-18, and 21-22 are currently pending to be examined on their merits.

II. Claim Rejections – 35 U.S.C. § 102(b) &103(a)

Claims 4-8, 10-12, and 16-20 are rejected under 35 U.S.C. § 102(b) as anticipated by or, alternatively, under 35 U.S.C. § 103(a) as obvious over Heine (US 4,403,064), as exemplified by Hans (US 3,350,438). The Applicants respectfully disagree.

Heine discloses a reactive resin (i.e., polyurethane) comprising a novolak resin, optionally a polyhydroxl compound, and a polyisocyanate is in the melt or in solution in an inert organic solvent, and the reactive resin is partly hardened by heating to a temperature of 120°-220°C with evaporation of the solvent used, if any (see col 3, lines 31-49, Heine). However, nowhere does Heine disclose a shape memory polymer or a polyol not comprising a chain extender. Not all polyurethane is a shape memory polymer, and it is not generally known in the art that a polyurethane composition comprising a novolak resin has a shape memory function. By contrast, the claimed fiber reinforced plastic in the present application recites a thermoset shape memory

polymer as a matrix resin. Because Heine does not teach every element as recited in the present application, the former does not anticipate the latter.

Heine, or Heine as exemplified by Hans, also does not render the present application obvious. Heine does not teach or suggest a polyurethane composition having a glass transition point (Tg) of at least 70°C without using a chain extender. It is generally known in the art that a chain extender is used for maintaining a high Tg in a conventional shape memory polymer, but it tends to shorten a pot life of the polymer. The present application demonstrates unexpected results, showing that it is possible to have an adequate pot life necessary for molding or forming of fiber reinforced plastic without a chain extender. The omission of chain extender lowers the Tg of the resulting polymer, but, surprisingly, it provides a polymer composition with a sufficient pot life and Tg with a low molecular weight polyol having an average molecular weight of from 100 to 250 and incorporating an isocyanate and polyol at the ratio as claimed.

Heine, or Heine as exemplified by Hans, does not suggest or teach a polyol having an average molecular weight of from 100 to 250 and not comprising a chain extender, as recited in claims 4 and 6. Heine discloses a polyol compound (e.g., polyester, polyester amide, polycarbonate, polyacetal, polyehioether, and polyether) that are chain extending agents (see col 4, lines 21-28, Heine). Heine also discloses a novolak resin, which is necessary for Heine, having an average molecular weight of at least about 300, in view of the structure formula of the novolak resin (see col 4, lines 6-16, of Heine). One consequence of these distinctions between Heine and the present application is that Heine does not teach or suggest that polyurethane composition has a glass transition point (Tg) of at least 70°C, as claimed in the present application.

In addition, Heine discloses higher polypropylene glycols having a molecular weight of up to 400 (see col 6, lines 27-29, Heine), but does not disclose a polypropylene glycol having a molecular weight of up to 250, as claimed in the present application. As shown in Tables 1 and 2 of the Specification, using a polypropylene glycol having a molecular weight of 400 can produce a polymer having a Tg of 42°C, but cannot produce a polymer having a Tg of at least 70°C.

Therefore, the present application is not obvious over Heine, or Heine as exemplified by Hans.

CONCLUSION

The Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, the Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date Sept. 3, 2008

By _____

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